

**MATERIAL SAFETY DATA SHEET** following 91/155/EECDate of issue: **May 22, 2002**State: **July 7, 1997**Page: **1 of 4**

Trade name:

**ALMAG® A1****1 Identification of the substance/preparation and of the company/undertaking**

1.1 Supplier: **REFRATECHNIK GmbH**  
 1.2 Address: **D-37079 Göttingen, Rudolf-Winkel-Str. 1**  
 1.3 Telephone: **++49 (0) 551 6941 0**  
 1.4 Telefax: **++49 (0) 551 6941 104**  
 1.5 Information: **R&D-Department (++49 (0) 551 6941 208)**  
 1.6 Emergency Telephone No.: **R&D-Department (++49 (0) 551 6941 208)**

**2 Composition/Information on Ingredients**

2.1 Chemical Characterisation: **Magnesia spinel brick**

2.1.1 CAS-No.	Chemical name	Concentration in %	Symbol	R-Phrases
<b>1309-48-4</b>	<b>Magnesia</b>	<b>50 - 100</b>	<b>n.k.</b>	<b>n.k.</b>
<b>1302-67-6</b>	<b>Spinel</b>	<b>10 - 25</b>	<b>n.k.</b>	<b>n.k.</b>

**3 Hazards Identification**

**As supplied the product is not dangerous. During handling (cutting, grinding, wrecking) non-siliceous dusts may be formed (see also chapter 8.).**

**4 First Aid Measures**

4.1 General Information: **None**  
 4.2 Inhalation: **Remove to fresh air.**  
 4.3 Skin contact: **Wash gently with soap.**  
 4.4 Eyes: **Flush eyes with plenty of water, seek medical care.**  
 4.5 Ingestion: **Drink plenty of water, seek medical care.**  
 4.6 Information for the Doctor: **None**

**5 Fire-fighting Measures**

5.1 Suitable Extinguishing Media: **No restrictions. As per surrounding area.**  
 5.2 Extinguishing Media which must not be used for Safety Reasons: **None**  
 5.3 Special Exposure Hazards arising from the Substance or Preparation itself, Combustion Products, Resulting Gases: **None**  
 5.4 Special Protective Equipment for Firefighters: **Not necessary.**

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**ALMAG<sup>®</sup> A1****6 Accidental Release Measures****Avoid dry sweeping. Wet material, sweep up and bag. Minimize dust generation.****7 Handling and Storage**

- 7.1 Handling: **A small amount of dust may be generated during handling.**
- 7.2 Storage: **Store dry as the product may hydrate under the influence of humidity resulting in cracking forming magnesium hydroxide. It is recommended to limit the storage time to maximum 1 year.**

**8 Exposure Controls/Personal Protection**

- 8.1 Engineering measures: **Ensure sufficient ventilation during handling.**

**8.2 Specific Control Parameters:**

CAS-Nr.	Substance	Type	Limit
	<b>General Limit for Dust (&lt; 5 µm)</b>	<b>MAK <sup>1)</sup></b>	<b>6 mg/m<sup>3</sup></b>

<sup>1)</sup> Maximum concentration at working place**8.3 Personal Protective Equipments**

- 8.3.1 General Protective and Hygienic Measures: **Keep away from food. Before breaks and at the end of work wash the hands.**
- 8.3.2 Respiratory Protection: **Approved dust respirator recommended.**
- 8.3.3 Hand Protection: **Gloves recommended.**
- 8.3.4 Eye Protection: **Approved eye protection recommended.**
- 8.3.5 Clothing: **Safety boots recommended.**

**9 Physical and Chemical Properties**

9.1.1	Appearance:	<b>Solid</b>		
9.1.2	Colour:	<b>Yellow-brown</b>		
9.1.3	Odour:	<b>n.a.</b>		
		Value/Range	Unit	Testing Method
9.2.1	Melting Point/Melting Range:	<b>&gt; 1980</b>	<b>°C</b>	
9.2.2	Boiling Point/Boiling Range:	<b>n.a.</b>	<b>°C</b>	
9.3	Flashpoint:	<b>n.a.</b>	<b>°C</b>	
9.4	Flammability (solid, gas):	<b>Not flammable</b>		
9.5	Ignition Temperature:	<b>n.a.</b>	<b>°C</b>	
9.6	Autoflammability:	<b>n.a.</b>		

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**ALMAG® A1****9 Physical and Chemical Properties (Cont.)**

		Value/Range	Unit	Testing Method
9.7	Explosive Properties:	<b>Not explosive</b>		
9.8.1	Lower Explosion Limit:	<b>n.a.</b>	Vol.-%	
9.8.2	Upper Explosion Limit:	<b>n.a.</b>	Vol.-%	
9.9	Vapour Pressure:	<b>n.a.</b>	hPa	
9.10	Bulk density:	<b>2.85 - 3.00</b>	g/cm <sup>3</sup>	
9.11.1	Solubility in Water:	<b>Not soluble</b>		
9.11.2	Solubility in:	<b>n.a.</b>	mg/l	
9.12	pH-Value in:	<b>Approx. 10</b>		
9.13	Partition Coefficient, n-Octanol/Water	<b>n.a.</b>	log POW	
9.14	Viscosity:	<b>n.a.</b>		
9.15	Solvent Separation Test:	<b>n.a.</b>	%	
9.16	Solvent Content:	<b>n.a.</b>	weight.-%	
9.17	Other Data:	<b>None</b>		

**10 Stability and Reactivity**

10.1	Conditions to avoid:	<b>Magnesia containing bricks can react with water to form hydrates which are non-hazardous, but destroy the bricks mechanically.</b>
10.2	Materials to avoid:	<b>Water</b>
10.3	Hazardous Decomposition Products:	<b>None</b>
10.4	Further Data:	<b>As supplied the product is stable even under elevated temperatures.</b>

**11 Toxicological Information****None****12 Ecological Information**

12.1	Persistence and Degradability:	<b>Persistent</b>
12.2	Mobility:	<b>None</b>
12.3	Bioaccumulative Potential:	<b>None</b>
12.4	Further Ecological Information:	<b>Not used bricks and bricks that are not contaminated with other materials can be disposed according to the regulations of local or federal authorities.</b>

**13 Disposal Considerations**

13.1	Product:	<b>EEC-Waste-Code: 31441</b>
13.2	Contaminated Packing Material:	<b>Combust or dispose.</b>

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**ALMAG<sup>®</sup> A1****14 Transport Information**

14.1	Air Transport ADR/RID-GGVs/E:	n.a.
14.2	Inland Navigation ADN/ADR:	n.a.
14.3	Sea Navigation IMDG/GGVSee:	n.a.
14.4	Air Transport ICAO-TI/ATA-DGR:	n.a.
14.5	Transport/further information:	<b><u>NOT DANGEROUS.</u></b> <b>Keep dry</b>

**15 Regulatory Information**

15.1	Classification	
15.1.1	Symbol:	None
15.1.2	Dangerous Component:	None
15.1.3	R-Phrases:	None
15.1.4	S-Phrases:	None
15.1.5	Special classification of preparations (according to annex II of 88/379/EEC):	None
15.2	National Regulations:	Please follow prevailing national regulations.

**16 Other Information**

These data base upon our today's knowledge. These data serve the purpose of the description of this product concerning security measures and handling. They cannot be considered as binding specifications of this product.

Data Sheet editing Department: **Quality Management**  
Contact person: **Jörn SWITALSKI**

Legend: n.a. .... not applicable n.k. .... not known